

## Little Lizard Wins

### Court of Appeals Decides in Favor of Flat-tails

by Wendy L. Hodges

**On 31 July 2001, the Ninth Circuit U.S. Court of Appeals announced its decision regarding the Flat-tailed Horned Lizard, *Phrynosoma mcallii* case – in favor of the Horned Lizard Conservation Society and its co-plaintiffs.**

Judge Berzon wrote “the Secretary [of the Department of Interior] both relied on an improper standard and failed to consider important factors relevant to the listing process. Accordingly, we find her decision arbitrary and capricious and reverse the district court’s order.”

The Court reversed a previous decision in favor of the Department of the Interior made by a lower district court. The case has now been sent back to the Secretary of the Department of the Interior. The Secretary must now reconsider whether or not the Flat-tailed Horned Lizard deserves protection under the Endangered Species Act (ESA), based on legal standards outlined in the Court’s opinion.

*Phrynosoma mcallii* has a long history of concern with the U. S. Fish and Wildlife Service for ESA protection on public and private lands in

California and Arizona. The Secretary first identified the lizard as a category 2 candidate for listing in 1982. In 1989, the species was elevated to a category 1 species. On November 29, 1993, the Secretary finally published a proposed rule listing the lizard as a threatened species. Under statutory requirements, the Secretary should have completed her review of the lizard and issued her final order by November 29, 1994, but that decision did not come. Plaintiffs filed suit to order action on the lizard, and the district court in Arizona agreed, and ordered the Secretary to issue a final decision within 60 days.

One month after the court’s order, federal and state agencies signed a Conservation Agreement (CA) that implemented a range-wide management strategy intended to protect the lizard. Critical to the CA was the designation of five management areas subject to protective measures, including lizard population monitoring, limitations on habitat disturbance such as off-highway vehicle use, and acquisition of private inholdings. Some of the measures included in the CA had been in place for years, long before the Secretary published the

initial proposed rule recommending the lizard for protection. Many of the actions and the overall scope of the Management Agreements effected by the conservation effort, however, were new, unimplemented and untested for conservation of the species.

On July 15, 1997, the Secretary issued her final decision withdrawing the proposed rule to list the species as threatened after its earlier recommendation for listing. Six months after the Secretary withdrew the proposed rule, we filed a lawsuit challenging that decision. The district court granted summary judgment in favor of the Secretary on June 16, 1999, upholding the Secretary’s decision not to list the lizard. We appealed this decision to the Ninth Circuit Court of Appeals who then sided for the lizard and reversed the lower court’s decision on 31 July 2001.

In the suit, we claimed that “the best scientific evidence” available on the lizard and its habitat demonstrates the presence of as many as four of the five statutory factors indicating that a species is either threatened or endangered and thus eligible for ESA protection.

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# Little Lizard Wins (for now) – continued from page 1

According to the written opinion, “The Secretary’s answer to this claim is two-fold: First, although the Secretary does not dispute that these factors may evidence threats to the lizard on private land, she contends that adequate habitat exists on public land to ensure the species’ viability. Second, the Secretary relies on the newly introduced Conservation Agreement, which she contends will establish added protections for the lizard’s public land habitat and thus remove the threat of extinction throughout all or a significant portion of its range in the foreseeable future. Both parts of this analysis, we conclude, are faulty.”

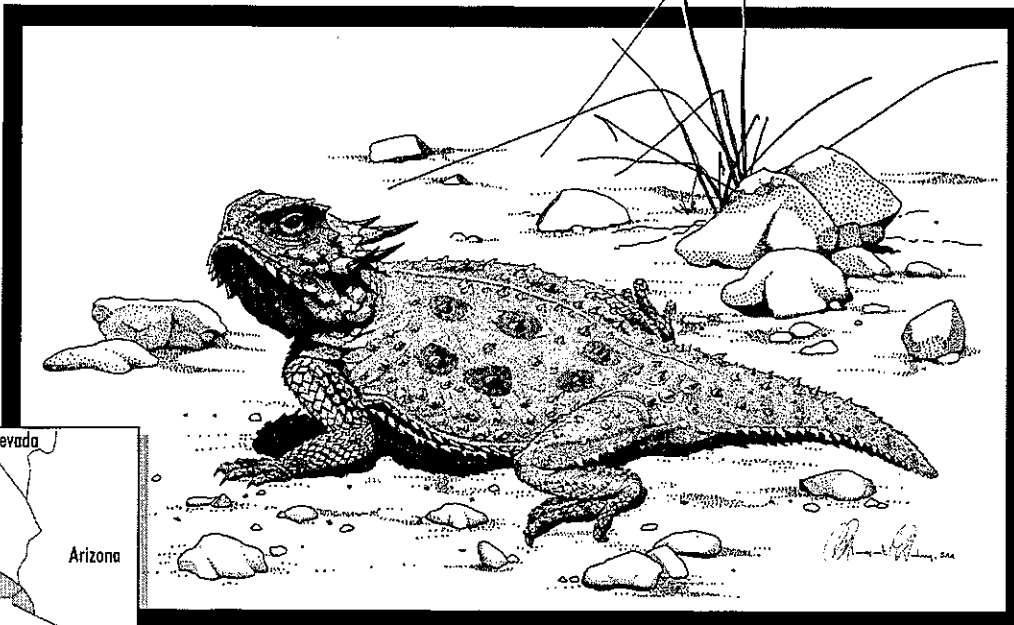
The Court focused the remaining opinion on the phrase “significant portion of a species range.” The Court believes the Secretary did not expressly consider the “extinction throughout . . . a significant portion of its range” issue at all.

The Flat-tailed horned lizard was proposed for listing as threatened. The ESA describes threatened species as those “which [are] likely to become . . . endangered species within the foreseeable future throughout all or a significant portion of [their] range.” The Court discussed the context of this phrase and its legislative history, reminding us that the intention of the ESA for including threatened species was “not only to protect the last remaining members of the species but to take steps to insure that species which are likely to be threatened with extinction never reach the state of being presently endangered.”

While government agencies responsible for protecting our public lands that are home to Flat-tails have entered into a Conservation Agreement (CA), the CA shows little promise for protecting Flat-tail habitat. The Court states firmly, “Nowhere does the Secretary account for the effects of failure to implement the CA immediately in those areas where delay was expected. Thus, it is unclear how the benefits assertedly flowing from the CA affected any particular portion of the lizard’s habitats, and accordingly unclear how the CA could have mitigated threats to the lizard throughout “a significant portion of its range.” We therefore conclude that the Secretary’s decision to withdraw the proposed rule designating the lizard as protected cannot be enforced on the basis of the Notice.”

The victory is in favor of the Horned Lizard Conservation Society and all our co-plaintiffs, but it is not an end to the Flat-tailed horned lizard’s need to be protected. The Secretary must now revisit the listing issue proposed in 1993 and determine from the Court’s orders if it warrants listing. Eight years later, we are back to the same question, but without having fought the Secretary’s decision, the Flat-tailed Horned Lizard would have no chance for ESA protection.

For a complete copy of the Court’s decision, you can find it on their website at: <http://www.ca9.uscourts.gov/> Select “Opinions” then scroll/select 2001 - July - (case number) 99-56362.



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Illustration: Mary Hawley, Designer, Sierra Sky Artisan  
For additional copies, write: HLCS, PO Box 122, Austin, TX 78767



Lizard in the Courts - one of the reasons we do this work, and why we believe it is important...

Artwork by HLCS member Mary Hawley

Sales from these b/w prints support HLCS participation in the legal work to protect the Flat-tail...

For your copy, send \$10 plus \$3 s/h to HLCS

**Flat Tail Horned Lizard**  
"Phrynosoma mcallii"

**HORNED LIZARD CONSERVATION SOCIETY**  
P.O. Office Box 122, Austin, Texas 78767

# A Horned Lizard by any other name...

## Zpellingii

by Joseph Collet

During the Annual Symposium conducted in Portal, Arizona, last year I was asked to write a definitive statement on the correct scientific spellings for three horned lizards in particular, namely, the Flat-tail, and two varieties of Short Horned lizards.

I was certainly no expert in this field, but my legal background was helpful when it came to giving weight to precedents. Consultations with a number of experts like Wade Sherbrooke and Wendy Hodges pointed me in the right direction and – thanks to a tip from Roger Repp to correspond with Bertrand Baur – I was able to get the bottom line from Hobart Smith of the University of Colorado in Boulder. Dr. Smith is a noted herpetologist with five decades of scientific research under his belt, and I have appealed to him as a final authority in view of his scholarly following and previous commentary on the question of spelling.

### The correct spellings are

*Phrynosoma mcallii*  
*Phrynosoma hernandesi*  
and  
*Phrynosoma douglasii*

You don't need to read any further.

However, if you are genuinely interested in the interplay amongst the rules of Latin, traditional notions of and conventions in taxonomy, and the protocol adopted by the Union in making determinations about the Code of the International Commission for Zoological Nomenclature ("ICZN"), then the rest of the story follows.

### Background

Taxonomic descriptions should be written in Latin.

Certain letters of the modern Roman Alphabet (as we call it) did not exist in the days when Latin was the lingua franca of Western Europe. Where a certain character or spelling method has evolved in the English language, such as the use of an apostrophe ('), then the closest thing to it in Latin must be substituted, before it is considered to be a correct rendition.

The oldest names, however undignified, take precedence over newer, more persuasive names.

Unless there was an obvious spelling mistake with reference to the person for whom a species is named, the original spelling must stand.

Only the official international body can revise the code and rectify past mistakes.

In actuality some names would look better if changed, but cosmetics are a low priority in the scheme of things. Stability is considered to be more important.

It is generally not in good taste to name an organism after one's self.

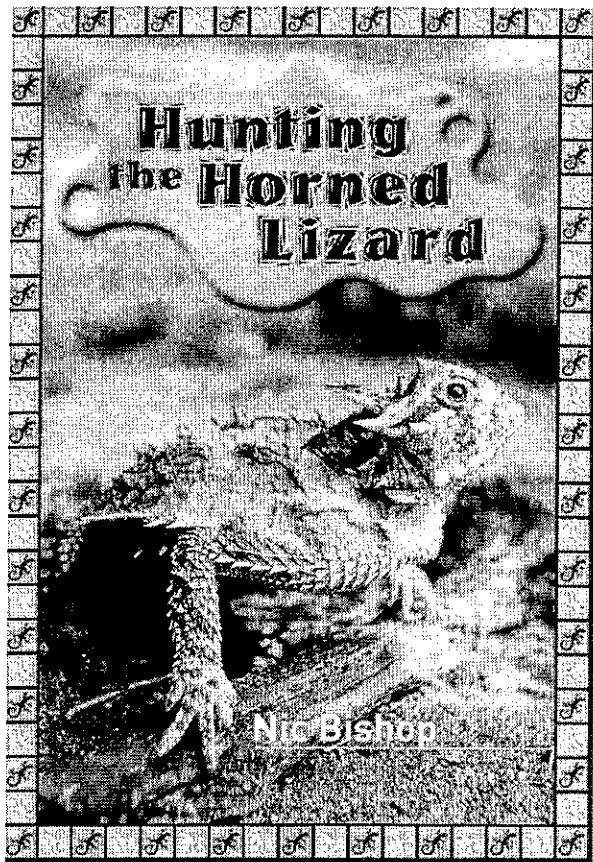
The distillation of the history and argumentation to arrive at the present position was difficult at best. For more detail on the logic and politics involved with which Dr. Smith had to grapple, I refer you to two papers:

1. *Herpetological Review* 30 (2), 1999, and
2. a 1991 paper by Geoffrey A. Hammerson and Hobart M. Smith in collaboration with The Nature Conservancy entitled, "The Correct Name for the Short-horned Lizard of North America".

*P. mcallii*: In 1852 during a military expedition led by Colonel George A M'Call, the existence of the unique Flat-Tailed Horned Lizard was first recorded. The proper spelling of the colonel's surname is amply documented, so how we got to the present corruption is best understood by first understanding that whereas no apostrophe exists in Latin, its functional equivalent must be substituted. That explains the additional "c" and basically has to do with the rules of Latin applied to taxonomy. The terminal "i" is another matter. Had the soldier's name been *M'Cally* we would understand that similarly no "y" was employed in the Latin alphabet so an "i" was substituted, and then a second "i" was added to follow the usual pattern denoting a species name. Sadly, that was not the case. Rather the original namer chose to submit the scientific description along with a weird spelling, hence for sake of consistency or "stability" the second "i" has stuck. The latest edition of the Code, 1999, requires the continuation of the double "i" as the name was originally proposed. This peculiar decision by the ICZN came in spite of the notion that a single "i" or double "i" could be construed as permissible variants, which conclusion was endorsed by a strong majority of those in attendance at a meeting of the Union a few years prior.

To quote an imminent scholar, "A big mistake, but so it is."

*P. hernandesi*: The common Castillian Spanish spelling of the corresponding surname, as everyone should know, is Hernández. Portuguese spellings or Gallego equivalents may employ the "s" instead of the "z" at the end. However, Girard who described the lizard in 1858



## Book Review

*Hunting the Horned Lizard* by Nic Bishop is a wonderful book for grammar school and junior high students who are interested in seeing how researchers carry out their work in the field with Texas horned lizards. The experiences come out of real-life studies by a group of high school students working with scientists at the Southwestern Research Station in the Chiricahua Mountains of southeastern Arizona. The program was sponsored by the Earthwatch Institute. Students use radiotelemetry to trace many aspects of the lives of these fascinating reptiles, including the vegetation they live in, ants found in their scats, and their behaviors. The attractively designed 32-page booklet is profusely illustrated with excellent photographs and drawings. Every school library in horned lizard country should have a copy.

- Wade C. Sherbrooke, Ph.D., Director  
Southwestern Research Station, American Museum of Natural History

*Hunting the Horned Lizard*  
is distributed by Pacific Learning, PO Box 2723,  
Huntington Beach, CA 92647-0723  
[www.pacificlearning.com](http://www.pacificlearning.com)

*Zpellinggii*, continued from page 4

evidently named it for Francisco Hernández whose great work on the biota of Mexico (1648) was obviously in mind. While the foregoing would seem to resolve the question, bear in mind that older forms of description (e.g., *Tapaya hernandesi* Girard) once considered a subgenus (until Zamudio, Jones and Ward published their convincing DNA findings) and *Agama douglassii* Bell (described even earlier, i.e., 1828—with which it was generally held to be in synonymy, albeit an invalid junior synonym) created certain precedents which had to be overcome. As with the *P. mccallii* above, a rule of Latin comes to our rescue to reconcile the “s” and “z” dichotomy. Since there is no “z” in Latin, “s” must be used. End of story. Why doesn’t *hernandesi* have a double “i”? Even though Baird (1859) added another (terminal) “i” because it looked right to him, he evidently was not considered the first reviser (see *P. douglasii*, supra), and therefore no change was warranted. Curiously, he also tried changing the “s”

back to a “z”, but evidently ran afoul with the rules of Latin in the latter case.

***P. douglasii*:** It seems everyone but the famous British botanical explorer and collector who made many discoveries in North America and the Hawaiian Island was confused about the spelling of his name. There is no evidence that Douglas himself, or his family, was inconsistent in the use of a single “s”. It was none other than Thomas Bell who misspelled Douglas’ name although he did get it right a time or two. As to the double “s” issue there is a rule in the Code [Art. 32(b) (I)] which states “If a name is spelled in more than one way in the work in which it was established, then, subject to Section c of this Article, the correct spelling is that chosen by the first reviser [Art. 24c].” Section c clearly indicates that an original spelling not adopted by the first reviser is an “incorrect original spelling”. Section d goes on to reflect that an incorrect original spelling “has no separate availability”, “can-

not enter into homonymy” and cannot “be used as a replacement name.” Accordingly, DeKay (1842: 31) may be considered to be the first reviser and he used a single “s”. Case closed, almost... Once again, the incorrect spelling derived from the man’s surname for whom the reptile was named is considered a lapsus and is therefore correctable. The double “i” is another matter.

Inasmuch as it does not threaten the stability of the name (i.e., the integrity of the root part of the name), we have seen as with the goofy spelling of *mccallii*, we are, unfortunately, stuck with this one too.

### Conclusion

Who is to say that someday logic might not prevail and rules be reshaped. While stability may be altered, it has already been in the past for other well-reasoned adjustments. Perhaps a few hundred or thousand other names will be brought into line with 21st century thinking. After all, who speaks Latin anymore?...

# Landon Lockett and *El Camaleon*

Landon Lockett, long-time HLCS member, wrote the words to *El Camaleon* - a song - about horned toads and their plight. He would like to have it sung and recorded by a conjunto (Tex-Mex accordion) band, and he has a tune in mind and an educational mission...

Anyone in *Phrynosomatics*-land with a conjunto band, or connections to one? *Let us know...*

## EL CAMALEON

Yo soy un lagarto famoso  
Me hincho de tan orgulloso  
Soy El Camaleon, un verdadero campeon  
Tan lindo y espinoso

Aunque yo sea muy macho  
Me sale sangre siempre que lloro  
De todas las comidas, prefiero las hormigas  
Sin ellas yo se que me muero

Vivo donde hay hormigueros  
De hormigas grandes y rojas  
Me gusta el calor, del frio tengo horror  
En el invierno las hormigas son pocas

Quien piensa que soy un sapo  
Esta muy enganado  
Si me besa la princesa, llevara una sorpresa  
Porque siempre sere lagarto

Ando cubierto de espinas  
Que me protegen de los corre caminos  
Y para el coyote, un bocado de sangre  
Mis armamentos son de los mas finos

Por favor no me llames cornudo  
Porque espina no es cuerno  
Y hay otra cosa, no me toques la esposa  
O de tus tripas yo hago menudo

Hay una hormiga sudamericana  
Que esta invadiendo mi tierra  
Ellas atacan todo, de escapar no hay modo  
Y su sabor no me gusta nada

Por favor no me saques del campo  
Si quieres ser mi amigo  
Si me llevas a tu casa, es el fin de mi raza  
Que ya ha sufrido tanto

© Landon Lockett 1994

## *a loose translation* of EL CAMALEON ("The Horned Lizard")

I'm such a famous lizard  
I swell with pride  
For I am El Camaleon, a true champion  
So handsome and spiny

Even though I'm very macho  
I can cry tears of blood  
Of all food, I like ants best  
Without them I know I'll die

So I live where there are ant beds  
With big red ants  
I love the heat, and hate the cold  
In winter ants are scarce

Whoever thinks I'm a toad  
Is seriously mistaken  
If the princess kisses me, she'll get a surprise  
Because I'll always be a lizard

I'm all covered with spines  
To protect me from road runners  
And for el coyote, a mouthful of blood  
My armaments are most refined

Please don't call me "horned"  
Because spines aren't horns  
In any case, don't touch my wife  
Or I'll make menudo of your insides

There's an ant from South America  
That's invading my homeland  
They attack everything, there's no escape  
And they taste lousy

Please don't pick me up  
If you want to be my friend  
If you take me home with you, El Camaleon is doomed  
And he's already suffered so much

© Landon Lockett 1994

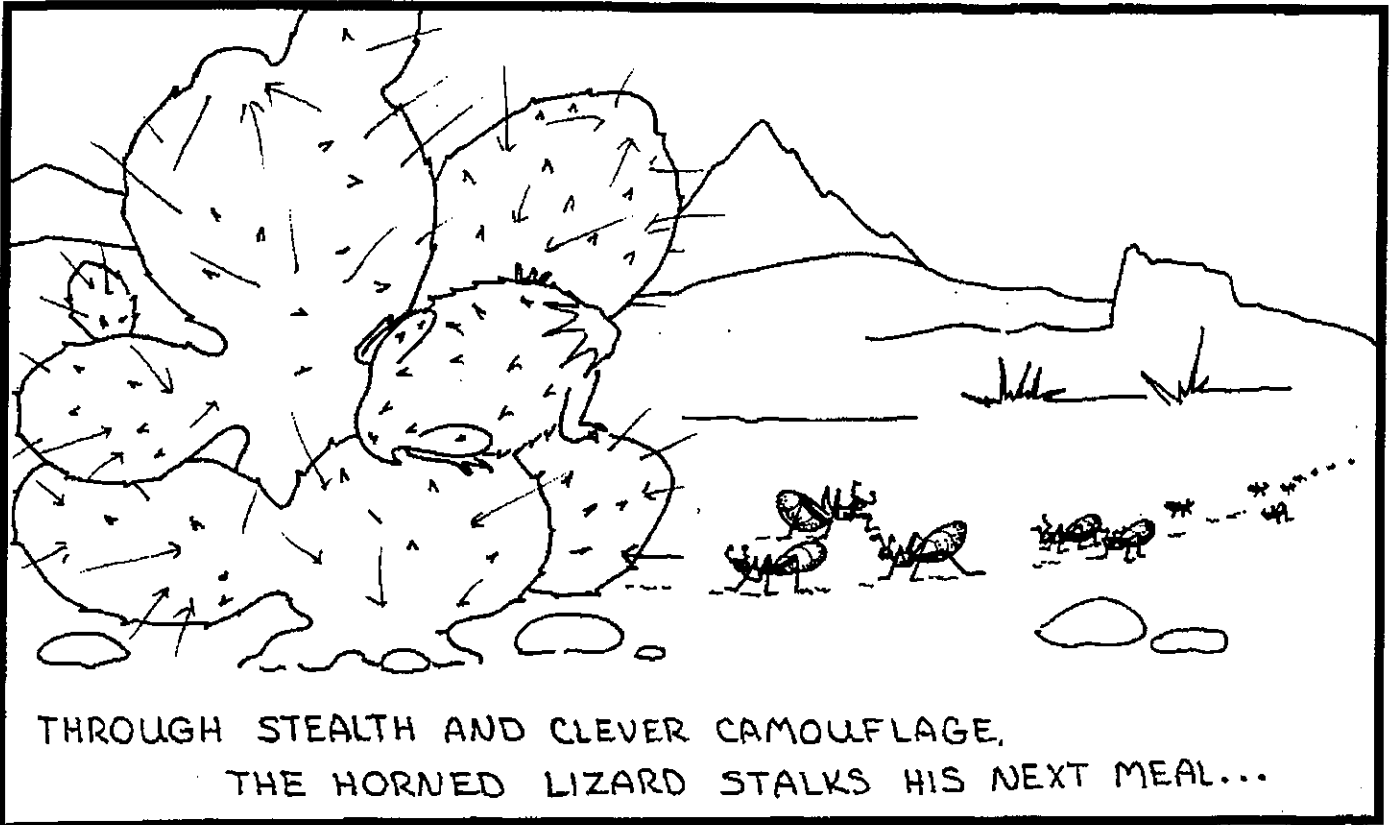
\*In Spanish, if you say a man has horns it means his wife is unfaithful.

Note from Landon - *Why Spanish? All I can say is that that's the way the song came to me, and I would feel awkward trying to put it in English. I'll leave a horned toad song in English to someone with that talent.*

Editor's note - Landon's original copy includes the accent marks.

# HAYWIRE

by M. Hawley



THROUGH STEALTH AND CLEVER CAMOUFLAGE,  
THE HORNED LIZARD STALKS HIS NEXT MEAL...

## Around HLCS...

Recent research by HLCS' own Wendy L. Hodges has been featured in the Wall Street Journal, Smithsonian Magazine, Reptiles!, and on ABC World News Tonight. Wendy - in addition to graduate studies at the U of Texas - serves as current board member of the Texas Herpetological Society and newly elected President-elect of HLCS.

The *Horny Toad Song* of Singer Monty Harper [monty@montyharper.com] will be at <http://www.mp3.com/HLCS> - and available for purchase, sales to benefit the HLCS. Rumor has it that Monty and wife Lisa have a new listener to the Horny Toad Song, born Evalyn Rose on April 9 of this year.  
*Congrats, Monty and Lisa!*

Lester G. Milroy III, President of the California Chapter, has produced a wonderful video titled "The San Diego Coast Horned Lizard - a Vanishing Natural Treasure".

He has kindly donated a copy to the HLCS archives and, with the help of Wendy Hodges and Bette Armstrong, we have several copies to check out to members. Please contact the HLCS if you would like to view this great video.

Congratulations to the newly elected Texas officers -  
Bill Brooks, President  
Ann Lang, Secretary  
Cheryl Franks, Treasurer

Thank you, Wanda Wood of Wood's Woods in San Antonio who contributes a portion of her sales of HL reproductions to HLCS!

One of our heros, Abraham Justus Holland, recently graduated from High School. How can this be? It was only yesterday when he and brother Noah were known as Spike and Spot, the Travelling Toads.

It was Abraham that, in 1993, spear-headed the drive to get the 73rd Texas Legislature to declare the Texas Horned Lizard as the official Reptile of Texas. Congrats, again, Abraham!

### Recent Additions to the HLCS Life Member List

Aqua Vitae, Inc.  
Sonya Berg  
Howard K. Barber  
David Levrier  
Stanley L. Parker  
Darren Pfeffer of Toadland Mfg.  
Karl Richter  
Lee Stone

Thank you for your vote of confidence in the HLCS!

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# Chapter Update – Sunny California

by Lester G. Milroy III, President

*Greetings to all from the sunny state of California!*

## Study Sites and Translocations

Two new study sites have been added to our list to monitor the San Diego Coast Horned Lizard in Southern California. Two other sites that have been monitored will be lost to development within the next 3 to 5 months. Studies are being set up and San Diego Coast Horned Lizards have been moved to test translocation survivability and dispersal. It is doubtful that translocations will work because most previous studies have shown a 90% to 95% failure rate in translocation attempts.

The sites of origin and the sites of relocation are in close proximity, but that is still no guarantee of success. Resources — ant nests and plant communities — are similar, but the carrying capacities are unknown and will be closely monitored and documented. The information so far gathered include:

- the number and density of HLs at both the development and the release sites;
- the methodology for capture and release;
- timing of activities relative to the HL's incubation period for eggs; and
- whether the HLs will be held in captivity for the time between capture and release.

Population demographics information was gathered as to male/female ratios, snout-to-vent lengths and weights. [More on preliminary data in the future.] We are hopeful that there will be some success in this translocation attempt. If it fails, like so many other translocations, this may be a crossroads in protecting habitats as well as the animals involved.

## Energy “Crisis” and Habitat Loss

Another dilemma is in the making in California. With the “energy crisis” in the headlines, more habitats are threatened because of the move to build more power plants. The option of redeveloping areas that are already lost to wildlife seems to be ignored. The old not-in-my-backyard” issue is becoming a problem. There are so many areas where commercial and industrial properties are vacant and have been for many years. It really seems like redevelopment is so much more the right answer to the problem than destroying habitat areas that remain undisturbed.

## Horned Lizard Center

The Horned Lizard Research and Conservation Nature Center is coming closer to reality in Southern California.

Margie, my wife, has designed pamphlets and brochures promoting the concept, and is in the process of developing “Herbie, the San Diego Coast Horned Lizard” as the spokesperson for the center. The pamphlets have sparked interest and we have been contacted by several foundations interested in providing support for the Center’s development. I have nearly completed the architectural model and design for the center which will be on display July 21st at a local foundation “gala.” With the positive response received, we are organizing and forming steering committees and a board of directors. We are also looking for more ideas to enhance the development and content for the center. *The Center is coming!*

School presentations have been on the increase and keeping things very busy for the HLCS Southern California Chapter. The first video project has been completed and has received positive support and response. The reviews may not spark Academy Award nominations but the weaknesses and strengths have been noted and will aid in the next version. For those who have had a chance to view it, feedback is needed. Whether you do or do not like it, please let me know.

## Pet Trade and Horned Lizards

On the internet, please visit <kingsnake.com> and the horned lizard forum. So many people have no clue about horned lizards. The pet trade continues to be a problem for the Desert Horned Lizards and the Shorthorned Lizards from Nevada, and the Roundtails from Texas. The numbers of horned lizards are alarming. Some folks I speak with tell stories of Roundtails and Desert Horned Lizards in the most distressing conditions in pet stores. And, of course, the “feed them crickets and mealworms” recipe is the main care information provided by pet stores. Some are a little more knowledgeable and suggest an ant diet, but others are lost in the haze of misunderstanding.

## Research

Research and study permits have been renewed with the California Department of Fish and Game and the work continues. I have also established a link with the Center for Conservation Biology at the University of California, Riverside. More to come.

## Education Ongoing

May we all continue to have great success in educating the public on the conservation needs of horned lizards throughout their ranges!





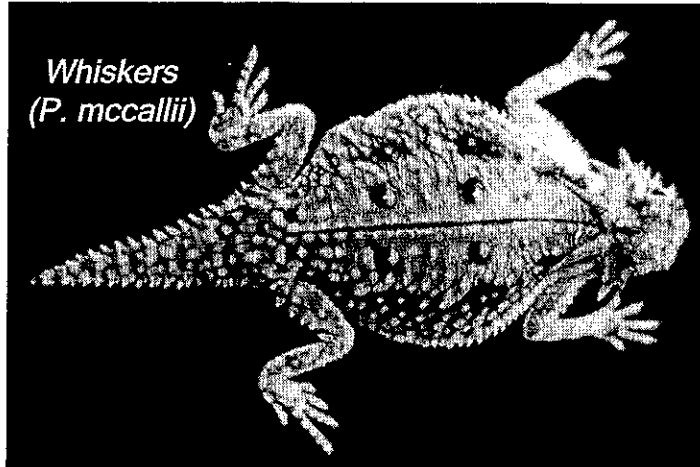
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# Chapter Update – Utah

## The Desert Wildlife Festival at St. George

by Joseph Collet

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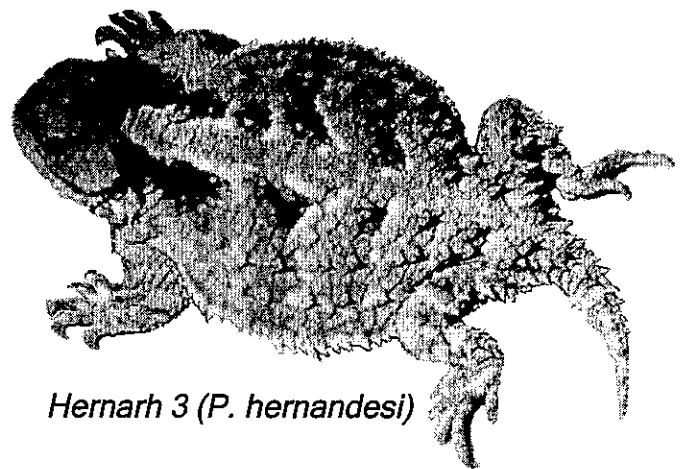
Friday, May 4, of this year, I represented the Horned Lizard Conservation Society at the Annual Desert Wildlife Festival.

Plenty of our “Facts About Horned Lizards” pamphlets were available and a number of people stopped by to see **Cortez**, the Texas Horned Lizard (*Phrynosoma cornutum*), **Okii**, the Desert Horned Lizard (*P. platyrhinos*) and **Groucho**, the Short Horned Lizard (*P. hernandesii*). I especially appreciated having Les Milroy’s video tape and Bertrand Baur’s video tape and photographs of Mexican species on hand. These were real people stoppers, and gave us the chance to share a teaching experience about conservation.

The favorite objects of the children’s attention were surprisingly *not* the live *Phrynosoma*, nor the horny toad hand-outs for coloring, but the plastic models generously provided by Larry Wisdom. They just couldn’t keep their hands off of them!

Some recordings from my daily TV program, “Home-work Hotline” were also on hand. This saved a lot of talking about ants and the differences between real toads and horny toads. People who watched saw the horned lizards eating ants, of course, and also were treated to see a tiger salamander and two different individuals of *Bufo woodhousei* ingest delicious cockroaches. Almost made me hungry!

On Saturday, May 5th, I was not able to man the booth, but signs marked the way, and ample literature was left behind. The festival was organized by a committee and Marilyn Davis from the BLM was in charge of staging. Other exhibitors and associations that conducted workshops or fieldtrips included Utah’s Division of Wildlife Resources, Red Cliffs Desert Reserve, Red Cliffs Audubon Society, Washington County School District, The Grand Canyon Trust, Arizona Fish & Game, The Native Plant Society, and Southern Utah University, to name a few.



Hernarh 3 (*P. hernandesii*)

I was pleased to have been invited to participate and enjoyed seeing many friends and making new ones. One family in attendance has already e-mailed me about upcoming field trips to rescue reptiles from heavy equipment on land about to be developed.

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**HLCS Utah members** - sign up a few of your friends and contact Joe (info page 2) to find out how you can help your Chapter establish a presence in Utah.

The Chapters are the backbone of the HLCS. Together, we can begin to educate the other 99%!

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# Chapter Update – Texas

## An Essay by Rachel Cook The Future of Horned Lizards

Rachel is a native Texas and has lived in both Dallas and Amarillo (where she saw her first horned lizard). A student at the University of North Texas, she is majoring in biology, with a minor in chemistry, and plans to work with endangered species after graduation. Rachel explains,

"I owe much of my interest and love of biology to, among others, my uncle, Dr. Michael Haiduk, who is a professor of biology at Lamar University in Beaumont, Texas. Throughout my life he has been the omniscient knowledge tree, it seems as though any question I ever had, he had the answer to, which kept my interest going."

This essay was written for one of her classes.

Throughout Texas, adults of 40 years of age and older can tell you about their childhood horny toad expeditions. Their stories about collecting dozens of these pocket-sized dinosaurs seem almost identical, and to each individual horny toads hold some mystique, as if that person gets lost in a treasured time of long ago while they are telling their story.

*I, however, do not have these stories to tell.*

In the past forty years, the horny toad - actually a lizard - has almost disappeared in east Texas and has declined greatly in Central and West Texas. I will not be able to recount, to my children, those lazy, hot summer days of childhood hunting horny toads in a magical time when they were abundant. Realizing that I have seen about three horned lizards in my whole life prompted me to choose this topic for my research.

I feel that my generation has been cheated, for we do not share these experiences with our elders and I do not want succeeding generations to feel this way. I see that people take for granted experiences that they have had with wildlife and assume that a particular species will just always be there, but the effects humans have had on the environment prove otherwise. I fear that my generation's unfortunate experience with the horned lizard is just

the predecessor for generations and species to come.

*I don't ever want a child,  
years from now, to tug on his  
mother's skirt and ask,  
"What's a horny toad?"*

Texas is home to three species of horny toads, the Texas horned lizard (*Phrynosoma cornutum*), roundtail horned lizard (*P. modestum*) and short-horned lizard (*P. douglassi*) (Sherbrooke, 1981). Only two species are endangered and the focus of this paper, *P. cornutum* and *P. douglassi*. These lizards prefer an arid environment and rely on camouflage because their awkward gait and relatively slow movement make them an easy target (Manaster, 1997). The Texas horned lizard has the widest range in Texas covering nearly three fourths of the state, with the roundtail occupying about half and the short-horned in only small portions of West Texas.

The horned lizard's diet consists of ants with some varieties of beetles and other invertebrates. When searching for food, the lizard is an active forager and is attracted to small, fast moving insects. Red harvester ants are the preferred item on the menu for the Texas horned lizard, but the short-horned lizard has one of the most varied diets, consisting of ants, beetles, flies, spiders, and moth larvae (Sherbrooke, 1981).



Photo by Jim Armstrong

Earth Day 2001 at Denton - HLCS' Bette Armstrong (aka Ol' Rip), Rachel Cook, and Larry Wisdom

Horned lizards possess many characteristics that make them unique animals. Their shape is wide and flattened with spines covering their body and their heads possess an adornment of horns. Each species has its own color pattern, but they are all suited to hiding from predators. When directly threatened, they can puff their bodies, hold completely still or even squirt blood from the corner of their eyes (Sherbrooke, 1981). Lastly, with the close of hibernation comes mating season. Little is known about lizard relations, but the males do not seem to fight over territory or go through the flamboyant displays of some of their lizard cousins. These lizards reproduce sexually and lay eggs, except for the short-horned lizard that gives birth to live young (Sherbrooke, 1981).

Many theories have been presented explaining why the horned lizard is declining in numbers. Initially, the collection of horned lizards for the pet trade in the forties and fifties decreased their numbers. Species such as the Texas horned lizard are hard to keep in captivity and, as a result, prove to be unsuitable as household pets.

One popular theory lies with their food source. Imported fire ants have displaced large numbers of harvester ants and horned lizards will not eat fire ants. The reason for their refusal to do so is not known but I suspect the lizards may not be immune to their

stings, but perhaps they are simply finicky eaters. Also, the pesticides used to kill the fire ant kill the harvester ant, depleting the lizards' food supply. Another theory is quite obvious, changes in land use. People have urbanized land rapidly and destroyed much of the horned lizard's natural habitat and with the people come contaminants, such as pesticides and pollution. There are many theories, but the blame can be placed on a combination of all of them.

So, what is being done to help this unique lizard from going extinct? With the observation that their populations have declined, laws have been passed in Texas to protect these two species. It is now illegal to collect them or have them in possession without special permits given only to those who study them.

In addition, institutions exist that collect and document horned lizards before they are released. Researchers at the Chaparral Wildlife Management Area have been active in monitoring horned lizards. It is 15,200 acres in size and is located north of Laredo, Texas. They estimate their Texas horned lizard population to be at 3,000 individuals. A mark-recapture program began at this management area in 1990 and from 1990 to 1996, 1,036 individuals had been marked with 112 being recaptured (Brush Country Laboratory).

As for the general public lending a helping hand, the Horned Lizard Conservation Society was established for these remarkable creatures. This organization puts out a newsletter, *Phrynosomatics*, increases public awareness and keeps track of population sizes. They, along with Texas Parks and Wildlife, circulate a "lizard watch" which is a sheet that the public can use to document where and when they see horned lizards (Texas Horned Lizard Watch). Its purpose is to aid in keeping track of the numbers in Texas. The effort is relatively new and significant increases in the horned lizard population have not been observed yet. With the help of ordinary citizens, biologists and the education of the public, the hope is that someday the lizards will no longer need their "protected" status.

***The possible extinction of the horned lizard serves as a bitter reminder that the earth is more fragile than humans once thought.***

It is my belief that people do not realize just how many animals are endangered and how real the possibility is that they may go extinct. I have put my heart into conservation efforts by choosing a career path that is directly related to endangered species and fulfillment will truly come for me when I know that I have made even the smallest difference.

Education holds the key to making that difference for myself, but especially for the general public. Animals are taken for granted by humans and the consequences of their absence from the food chain are not understood. People don't comprehend that almost every action they take is a direct influence on the environment and its animal inhabitants. From flushing the toilet to spreading weed killer on lawns, to parking a car on the street, we all contribute to the demise of the ecosystem. The sad truth is that we no longer know how to live any other way. So, the real solution is to be mindful of the things we do and to do things in moderation; do not take animals from their wild habitats and take steps to keep their habitats safe, including such things as recycling and carpooling.

***Future generations deserve to be able to enjoy wildlife and biomes that have brought me such joy and peace.***

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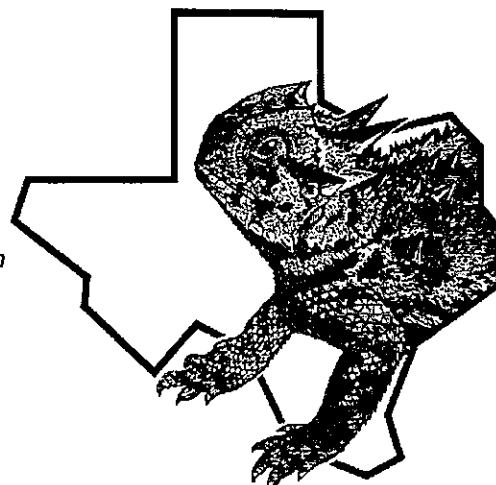
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Margaret (above) and Drew Taylor of Denton, Texas, enjoyed the HLCS booth at Earth Day this year.



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